

CASE PP/1-20303/A/CONT/CPA/DIV/CONT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF

FRANÇOIS GUGUMUS

APPLICATION NO: 10/081,291

FILED: FEBRUARY 22, 2002

FOR: SYNERGISTIC STABILIZER MIXTURE

Group Art Unit: 1714

Examiner: Antionette Kriellion Sanders

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

DECLARATION UNDER 37 CFR 1.132

I, François Gugumus, a citizen of France and a resident of 4123 Allschwil, Switzerland, hereby declare:

That I was awarded the degree of a Doctor of Science by the University of Strassbourg, France, in 1965.

That I have been employed by Ciba-Geigy AG, now Ciba Inc., as Chemist in the Additives Division and have been engaged in the field of stabilizers for polymers since 1970.

That I am an inventor of numerous U.S. Patents, for example Nos. 4,148,783; 4,692,486; 4,623,480 and 4,734,449 assigned to Ciba-Geigy Corp.

That I am the author of numerous technical articles relating to the same or closely related field of research, for example:

"Progrès dans la protection des matières plastiques contre le rayonnement UV", Kunststoffe-Plastics 22 (1975), 11-19;

"Developments in the UV stabilization of polymers", Developments in Polymer Stabilization, Applied Science Publishers Ltd., London, 1979, 261-308;  
"Contribution to polyethylene photooxidation", Angewandte Makromolekulare Chemie 158/159 (1988), 151-176;  
"Antioxidantien", Kunststoffe 77 (1987), 1070-1107;  
"Lichtschutzmittel", Kunststoffe 77 (1987), 1165-1210;  
"The use of accelerated tests in the evaluation of antioxidants and light stabilizers", Developments in Polymer Stabilization, Applied Science Publishers Ltd., London, 1987, 239-289.

That I am the inventor of U.S. Patent Application Serial No. 10/081,291 and 08/858,191 now U.S. Patent No. 6,015,849.

I am the Declarant for a Declaration submitted and relied on during the prosecution of U.S. Serial No. 08/858,191, now U.S. Patent No. 6,015,849. This Declaration was signed by me on April 6, 1998 and submitted to the USPTO on June 4, 1998.

Compound B used in the comparative tests of said Declaration was purchased commercially under the trade name UVASORB HA 88.

I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed this 4<sup>th</sup> day of November 2008

François Gugumus

François Gugumus

A-20303/A/CONT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF

FRANCOIS GUGUMUS

SERIAL NO. 08/858,191

FILED: April 21, 1997

FOR: SYNERGISTIC STABILIZER MIXTURE

Group Art Unit: 1511

Examiner: V. Hoke

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

DECLARATION UNDER 37 CFR 1.132

I, François Gugumus, a citizen of France and a resident of 4123 Allschwil, Switzerland, hereby declare:

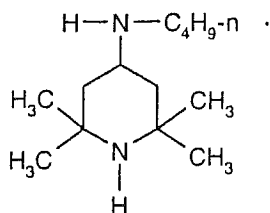
That I was awarded the degree of a Doctor of Science by the University of Strassbourg, France, in 1965.

That I have been employed by Ciba-Geigy AG, now Ciba Specialty Chemicals Inc., as Chemist in the Additives Division and have been engaged in the field of stabilizers for polymers since 1970.

That I am an inventor of numerous U.S. Patents, for example Nos. 4,148,783; 4,692,486; 4,623,480 and 4,734,449 assigned to Ciba-Geigy Corp.

That I am the author of numerous technical articles relating to the same or closely related field of research, for example:

"Progrès dans la protection des matières plastiques contre le rayonnement UV",  
Kunststoffe-Plastics 22 (1975), 11-19;



#### TEST METHOD A:

100 parts of polypropylene powder (melt flow index: ~ 2 g/10 min at 230°C and 2160 g) are blended in a barrel mixer with 0.05 parts of pentaerythrityl-tetrakis{3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate}, 0.05 parts of tris{2,4-di-tert-butylphenyl} phosphite, 0.1 parts of Ca stearate and the amount of stabilizer indicated in Table 1. Then, the blend is compounded in an extruder at temperatures of 180 - 220°C. The granules obtained on extrusion and granulation are transformed into films at 220 - 260°C in a second extruder equipped with a flat sheet die. The films are cut into ribbons which are drawn to achieve a stretch ratio of 1:5. The tapes obtained with this procedure are finally 50 µm thick and 2.5 mm wide.

The tapes are mounted without tension on sample holders and exposed in a WEATHER-OMETER Ci 65 (black panel temperature  $63 \pm 2^\circ\text{C}$ , without water-spraying). Periodically, the tensile strength of the exposed tapes is measured. The exposure time ( $T_{50}$ ) corresponding to a loss of 50 % of the initial tensile strength is a measure for the efficiency of the stabilizer.

A synergistic effect of a stabilizer mixture is determined by a comparison of a calculated  $T_{50}$  value with the actually measured  $T_{50}$  value. The  $T_{50}$  values are calculated on the basis of the additivity law (B. Ranby and J.F. Rabek; Photodegradation, Photo-oxidation and Photostabilization of Polymers, Principles and Applications, John Wiley & Sons, London, New York, Sydney, Toronto, 1975, pages 418 and 419) according to the following equations, when, in the polypropylene, the overall concentration of the stabilizer is 0.1 %:

("%" means always "% by weight, relative to the weight of the polypropylene")

Expected stabilizing activity for a mixture of 0.025% (A) and 0.075% (B)  
= 0.25 {Stabilizing activity of 0.1% (A), alone} + 0.75 {stabilizing activity of 0.1% (B), alone}

Expected stabilizing activity for a mixture of 0.033% (A) and 0.066% (B)  
= 0.33 {Stabilizing activity of 0.1% (A), alone} + 0.66 {stabilizing activity of 0.1% (B), alone}

Expected stabilizing activity for a mixture of 0.05% (A) and 0.05% (B)  
= 0.5 {Stabilizing activity of 0.1% (A), alone} + 0.5 {stabilizing activity of 0.1% (B), alone}

Expected stabilizing activity for a mixture of 0.066% (A) and 0.033% (B)  
= 0.66 {Stabilizing activity of 0.1% (A), alone} + 0.33 {stabilizing activity of 0.1% (B), alone}

Expected stabilizing activity for a mixture of 0.075% (A) and 0.025% (B)  
= 0.75 {Stabilizing activity of 0.1% (A), alone} + 0.25 {stabilizing activity of 0.1% (B), alone}

Since, in the indicated concentration range, the stabilizing activity of the single stabilizers linearly increases with the concentration, the same overall concentration of the stabilizers (0.1%) has to be used for the calculation of the activity expected from a stabilizer mixture.

The values obtained are summarized in Table 1.

The stabilizer mixture shows a synergistic effect, when  $T_{50 \text{ measured}} > T_{50 \text{ calculated}}$ .

Table 1:

Stabilizer	(A)/(B) ratio	$T_{50 \text{ measured}}$ / hours *)	$T_{50 \text{ calculated}}$ / hours
Control	————	685	————
0.1 % (A)	————	3100	————
0.1 % (B)	————	4400	————
0.025 % (A) and 0.075 % (B)	1:3	4200	4075
0.033 % (A) and 0.066 % (B)	1:2	4650	3930
0.05 % (A) and 0.05 % (B)	1:1	4650	3750
0.066 % (A) and 0.033 % (B)	2:1	4000	3500
0.075 % (A) and 0.025 % (B)	3:1	3700	3425

\*) High values indicate a good stabilizing activity

The data shown in Table 1 clearly reveal a synergistic effect.

#### **TEST METHOD B:**

100 parts of polypropylene powder (melt flow index ~ 3.5 g/10 min at 230°C and 2160 g) are blended in a barrel mixer with 0.05 parts of pentaerythrityl tetrakis(3-(3,5-di-tert-butyl-4-hydroxyphenyl)propionate), 0.05 parts of tris(2,4-di-tert-butylphenyl) phosphite, 0.1 parts of Ca stearate and the amount of stabilizer indicated in Figures I and II. Then the blend is compounded in an extruder at temperatures of 180 - 220°C. The granules obtained on extrusion and granulation are transformed into films at 220-260°C in a second extruder equipped with a flat sheet die. The films are cut into ribbons which are drawn to achieve a stretch ratio of 1:6. The tapes obtained with this procedure are finally 50 µm thick and 2.5 mm wide.

The tapes are mounted without tension on sample holders and subjected to natural weathering in Florida (45° South, direct, approximately 140 kLy/year).

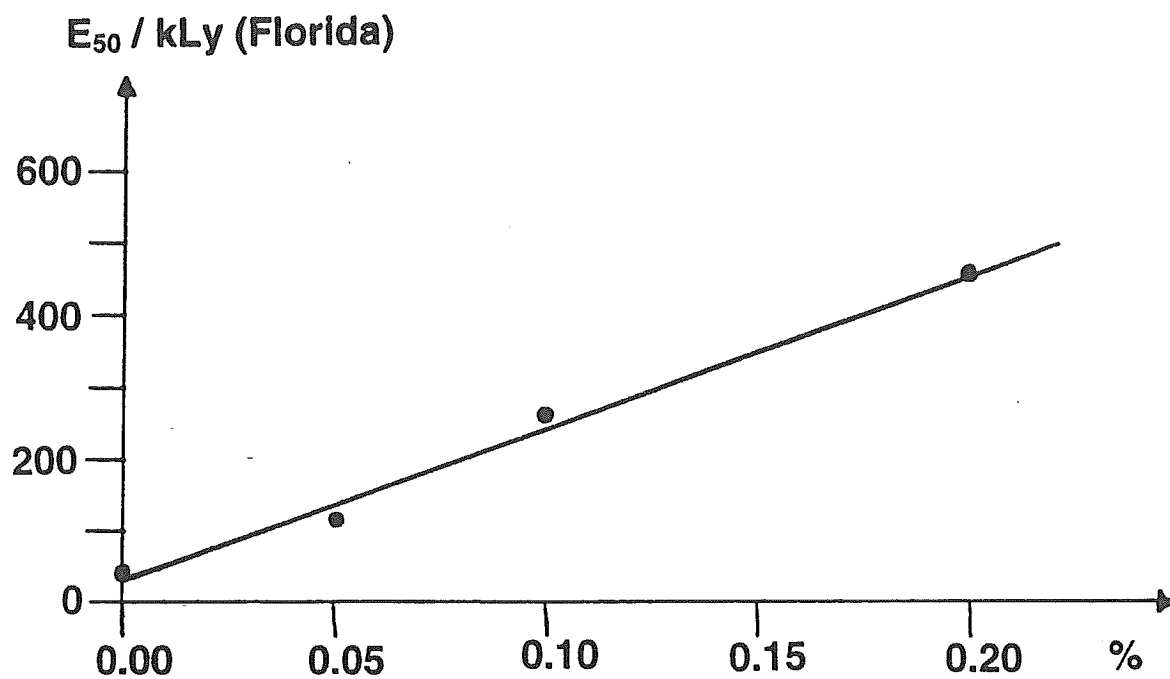
Periodically, the tensile strength of the exposed tapes is measured. The received energy (in kLy) corresponding to a loss of 50 % of the initial tensile strength ( $E_{50}$ ) is a measure for the stabilizing efficiency of the light stabilizer.

**The values obtained are shown in Figures I and II which clearly reveal that, in the indicated range, the activity of the stabilizers tested linearly increases with the concentration.**

“%” means “% by weight of the stabilizer, relative to the weight of the polypropylene”)

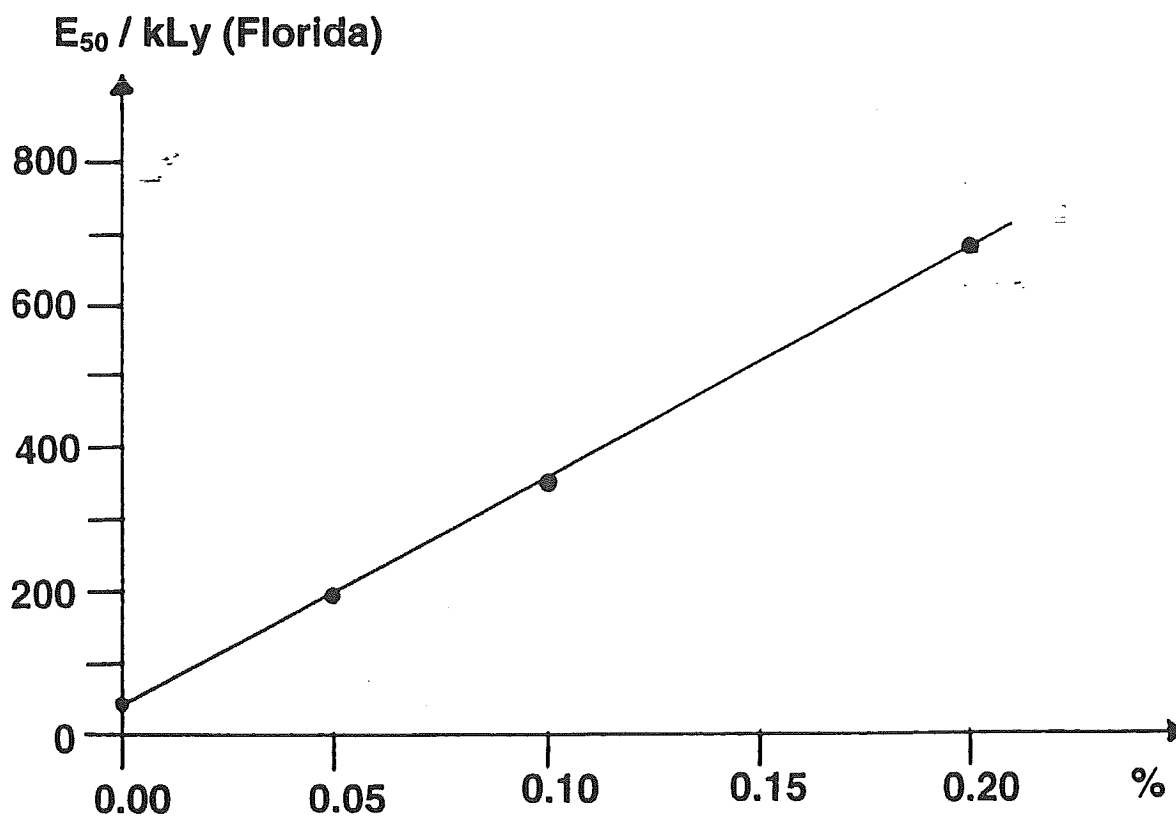
**Figure I:**

Concentration dependency of the stabilizing activity of (A)



**Figure II:**

Concentration dependency of the stabilizing activity of (B)





I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that wilful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such wilful false statements may jeopardize the validity of the application or any patent issuing thereon.

Signed this 6<sup>th</sup> day of April 1998

A handwritten signature in cursive script, reading "François Gugumus". The signature is written in dark ink and is positioned above a horizontal line.

François Gugumus

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of :  
Francois GUGUMUS :  
Serial No. 10/081,291 : Group Art Unit 1714  
Filed February 22, 2002 : Examiner K. Sanders  
FOR: SYNERGISTIC STABILIZER MIXTURE

AMENDMENT

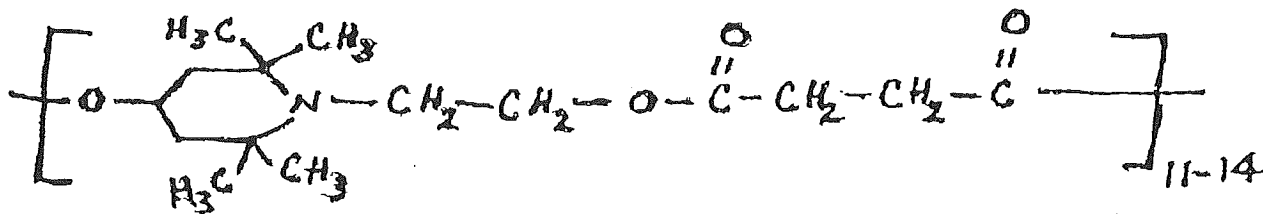
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Please amend the application as follows:

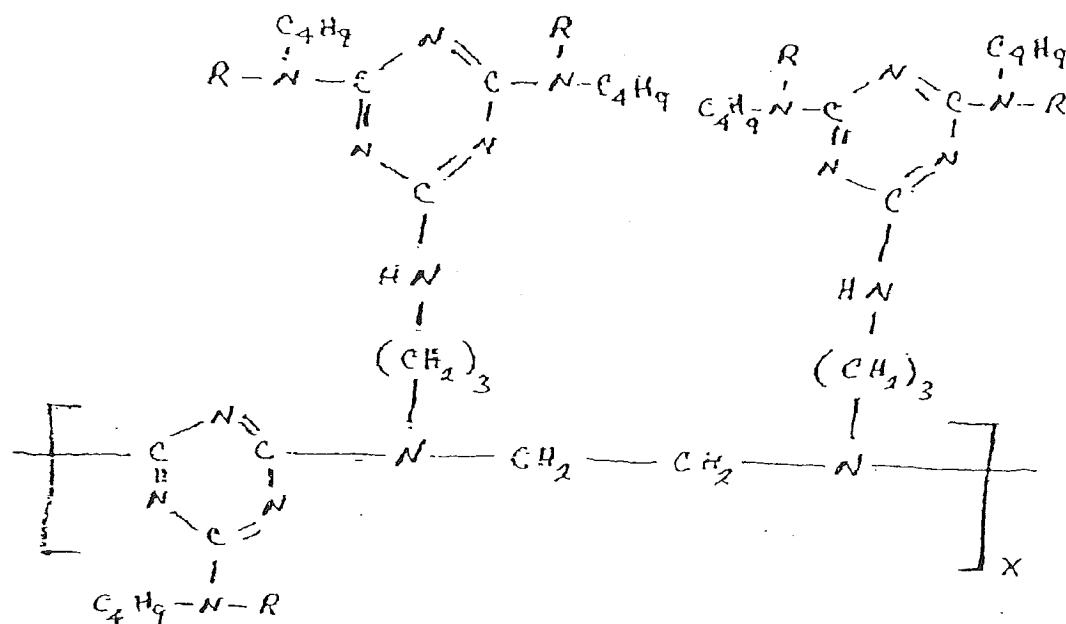
Add the following claim:

Claim 28. A stabilizer mixture comprising a component a) and a component e) in a weight ratio of 1:1 wherein component a) is a product of the formula

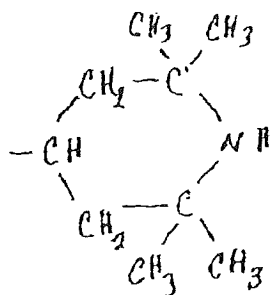


and

component e) is a product having the structural formula



wherein R is



and wherein x is a number such that the highest number average molecular weight (osmotic method) is 3200 and the lowest number average molecular weight (osmotic method) is 2900.

REMARKS

This AMENDMENT is presented to correct a PROPOSED AMENDMENT which was presented in connection with GUGUMUS RESPONSIVE MOTION 2 filed in Patent Interference No. 105,262.

In the PROPOSED AMENDMENT, the formula for component a) of claim 28 contained clerical errors in that the four methyl groups attached to the piperidine ring were shown as "CH<sub>2</sub>" rather than the correct "CH<sub>3</sub>".

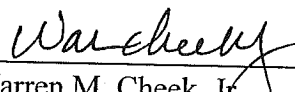
In its REDECLARATION - Bd. R. 203(c) (Paper No. 57) issued July 27, 2006, the Board ordered the party GUGUMUS to submit this corrected claim 28.

Please charge any fee necessary for this Amendment to Deposit Account No. 23-0975.

Respectfully submitted,

Francois GUGUMUS

By:

  
Warren M. Cheek, Jr.  
Registration No. 33,367 for  
John T. Miller  
Registration No. 21,120  
Counsel for Gugumus

JTM/kjf  
WENDEROTH, LIND & PONACK, L.L.P.  
2033 K Street, N.W., Suite 800  
Washington, D.C. 20006-1021  
Telephone (202) 721-8200  
Facsimile (202) 721-8250  
August 3, 2006